IN THE SPECIFICATION:

Please replace the paragraph beginning at line 26 of page 4 with the amended paragraph below:

The Fe-Ni alloy material for a shadow mask of the present invention is developed based on the above findings and comprising: in terms of % by weight, 34.0 to 38.0% of Ni, 0.05 to 0.45% of Cu, 0.10 to 0.50% of a combined total for Mn and Cu, no more than 0.10% of Si and 0.0004 to 0.005% of S with the balance being Fe and other unavoidable impurities; wherein a total count of MnS precipitates and Cu-S system ~~type~~ precipitates having a diameter of 0.01 to 3 μm located on the surface of a foil strip 0.05 to 0.3 mm thick being at least 2,000 count/mm^2.

Please replace the paragraph beginning at line 4 of page 5 with the amended paragraph below:

In accordance with another feature of the present invention, there is provided an Fe-Ni alloy material for a shadow mask, comprising: in terms of % by weight, 30.5 to 34.5% of Ni, 35.0 to 38.0% of a combined total of Ni and Co, 0.05 to 0.45% of Cu, 0.10 to 0.50% of a combined total of Mn and Cu, no more than 0.10% of Si and 0.0004 to 0.005% of S with the balance being Fe and other unavoidable impurities; wherein a total count of MnS precipitates and Cu-S system ~~type~~ precipitates having a diameter of 0.01 to 3 μm located on the surface of a foil strip 0.05 to 0.3 mm thick being at least 2,000 count/mm^2.

Please replace the paragraph beginning at line 7 of page 6 with the amended paragraph below:

Cu and Mn improve etching properties by forming an MnS precipitates that is a compound of Mn with S, and by forming a Cu-S system ~~type~~ precipitates. In this case, Mn is added as a deoxidizing agent, and, by forming MnS with S which deteriorates hot workability, Mn effectively let S harmless. Furthermore, minutely precipitated MnS in an Fe-Ni alloy acts as etching starting points, and the presence of numerous precipitated starting points is effective in facilitating uniform etching. Mn and Cu are added to improve etching properties, but the sum of the amount added must be regulated since their presence raises the coefficient of thermal expansion when too much is added. That is, etching properties are insufficiently improved when the sum of Mn and Cu concentrations is less than 0.10%, and the coefficient of thermal expansion is too high when it exceeds 0.50%. Therefore, the sum of Mn and Cu concentrations should be 0.10% to 0.50%.

Please replace the paragraph beginning at line 7 of page 7 with the amended paragraph below:

S allows MnS precipitates and Cu-S system ~~type~~ precipitates capable of improving etching properties to be precipitated, but is not sufficiently effective when the concentration is less than 0.0004%, and deteriorates hot workability when the concentration exceeded 0.005%. Therefore, the S concentration is set at 0.0004 to 0.005%.

Please replace the paragraph beginning at line 13 of page 7 with the amended paragraph below:

MnS precipitates and Cu-S system ~~type~~ precipitates

Please replace the paragraph beginning at line 14 of page 7 with the amended paragraph below:

The dispersion of MnS precipitates and Cu-S system ~~type~~ precipitates allows nearly truly circular holes to be etched, because the MnS precipitates and Cu-S system ~~type~~ precipitates present in the vicinity of or just over a photo resist mask opening outline act as etching starting points. Therefore, a broad range of aperture diameter for etched penetrating openings caused by localized etching defects is suppressed. In order to achieve this effect, MnS precipitates and Cu-S system ~~type~~ precipitates needed to be present in the aforementioned sites at least the designated frequency. Therefore, the sum of individual precipitates counts is set at ~~at~~ least 2,000 count/mm^2.

Please replace the paragraph beginning at line 24 of page 7 with the amended paragraph below

MnS precipitates and Cu-S system ~~type~~ precipitates having a diameter smaller than 0.01 μm do not act as etching starting points. In addition, aperture diameter uniformity is adversely affected due to damage to etching aperture outlines when the diameter exceeds 3 μm. Thus, the diameter of the aforementioned precipitates on a foil strip surface is set at 0.01 to 3 μm.

Please replace the paragraph beginning at line 30 of page 7 with the amended paragraph below:

Thus, in the present invention, excellent opening diameter uniformity for etched penetrating openings and significantly improved etching properties are realized since MnS precipitates and Cu-S system ~~type~~ precipitates are dispersed as described above under designated conditions. In addition, the Mn concentration can be reduced and the coefficient of thermal expansion lowered by having Cu present at 0.05 to 0.45%. The Cu-S system ~~type~~ precipitates were identified using a X-ray diffraction pattern, and results indicated the presence of a multiple number of compounds such as CuS, Cu_2S and the like, and they are collectively referred as Cu-S system ~~type~~ compounds. So as

the above Cu-S system ~~type~~ precipitates, the composition shown in a binary phase diagram for Cu-S can be cited as an example. As far as more specific compositions are concerned, Cu_2S or non-stoichiometric compositions of Cu and S or the like may be mentioned but are not limited to these examples.

Please replace the paragraph beginning at line 13 of page 8 with the amended paragraph below:

Here, the MnS and Cu-S system ~~type~~ inclusions (include precipitates) in a material can be observed using a transmission electron microscope using the procedure described below.

Please replace the paragraph beginning at line 9 of page 9 with the amended paragraph below:

Here, a portion of Ni may be replaced with Co in the present invention, and the coefficient of thermal expansion can be further reduced. The present invention includes such embodiments and is an Fe-Ni alloy material for a shadow mask, comprising: in terms of % by weight, 30.5 to 34.5% of Ni, 35.0 to 38.0% of a combined total of Ni and Co, 0.05 to 0.45% of Cu, 0.10 to 0.50% of a combined total of Mn and Cu, no more than 0.10% of Si and 0.0004 to 0.005% of S with the balance being Fe and other unavoidable impurities; wherein a total count of MnS precipitates and Cu-S system ~~type~~ precipitates having a diameter of 0.01 to 3 μm located on the surface of a foil strip 0.05 to 0.3 mm thick being at least 2,000 count/mm^2.

Please replace the paragraph beginning at line 13 of page 10 with the amended paragraph below:

In order to obtain minute precipitates (include inclusions) which exist over an entire material, not only adding the aforementioned specific elements but also perform the heat treatment and processing at appropriate conditions during the process from

melting and casting step to forming a foil strip product step. The inventors extensively investigated minute precipitates and inclusions in a material by combining various elements and various conditions of heat treatment and processing. As a result, the inventors discovered that numerous minute MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates can be formed in a product by adding correct amounts of Mn, Cu and S, conducting repeated cold rolling and recrystallization annealing steps after hot rolling an Fe-Ni alloy slab, and by finishing to a prescribed thickness in the final cold rolling, by rectifying the material heat hysteresis, particularly rectifying the heating conditions during recrystallization annealing.

Please replace the paragraph beginning at line 1 of page 11 with the amended paragraph below:

The Fe-Ni alloy materials used in shadow masks are ordinarily from 0.05 to 0.30 mm thick and are finished to a product thickness by subjecting a sheet 2 to 6 mm thick after hot rolling to repeated cold rolling and recrystallization annealing processes followed by a final cold rolling. The recrystallization annealing condition is required to be appropriate in order to precipitate MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates minutely in the present invention.

Please replace the paragraph beginning at line 8 of page 11 with the amended paragraph below:

The recrystallization annealing is conducted at 650 to 1000°C. The solubility product of Mn and S in a solid solution ([%Mn] x [%S]) and the solubility product of Cu and S in a solid solution ([%Cu] x [%S]) in an Fe-Ni alloy change suddenly in a 1000 to 1200°C temperature range. That is, MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates are readily dissolved in an Fe-Ni alloy in the form of a solid solution at temperatures higher than 1200°C, but much of the MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates

precipitate at temperatures at or below 1000°C. Figure 1 presents the foundation data indicating that the pit density is at least 2,000 count/mm^2 when the heat treatment temperature is at or below 1000°C. Therefore, etching properties are adversely affected due to further solid dissolution of MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates when the recrystallization annealing temperature exceeds 1000°C. Still, a pit comes into view as the eroded holes (pits) of precipitates and inclusions which are formed when a sample was immersed in an acidic solution such as dilute hydrochloric acid, dilute sulfuric acid and the like and a potential in an activated dissolution region was applied for several seconds to several tens of seconds to cause anodic dissolution. Therefore, occurrence of precipitates and inclusions can be evaluated according to the pit density (count/mm^2).

Please replace the paragraph beginning at line 10 of page 12 with the amended paragraph below:

Conducting all recrystallization annealing steps at 650 to 1000°C is desirable for increasing the amount of MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates, but a large amount of the precipitates can be obtained by conducting only the final recrystallization annealing at 650 to 1000°C.

Please replace the paragraph beginning at line 15 of page 12 with the amended paragraph below:

Correcting heat hysteresis during hot rolling could further introduce minute precipitations into Fe-Ni alloys. Hot rolling of Fe-Ni alloys is ordinarily conducted at 950 to 1250°C, but much of the MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates are in solid solution in this temperature range. So, MnS precipitates and Cu-S <u>system</u> ~~type~~ precipitates can be allowed to precipitate during a cooling step by gradually cooling a sheet after hot rolling. In addition, annealing without accompanying recrystallization, for

example, an aging treatment or a stress relief annealing is a powerful method to accelerate and increase precipitation of MnS precipitates and Cu-S system ~~type~~ precipitates.

Please replace the paragraph beginning at line 29 of page 14 with the amended paragraph below:

The Cu concentration in sample No. 9 was 0.05%, the lower limit in the present invention, but the sum of Mn and Cu concentrations was below the lower limit (0.10%). As a result, the count for the MnS precipitates and Cu-S system ~~type~~ precipitates effective in improving etching properties decreased to less than 2,000 counts/mm^2 and resulted in a high etching defect generation frequency.

Please replace the paragraph beginning at line 4 of page 15 with the amended paragraph below:

The S concentration in sample No. 10 was 3 ppm and was below the lower limit (4 ppm) for the present invention. As a result, the count for MnS precipitates and Cu-S system ~~type~~ precipitates effective in improving etching properties decreased to less than 2,000 counts/mm^2 and resulted in a high etching defect generation frequency.

Please replace the paragraph beginning at line 10 of page 15 with the amended paragraph below:

The sum of Mn and Cu in sample No. 11 exceeded the upper limit (0.50%) for the present invention, and the coefficient of thermal expansion was higher than those of examples of the present invention although no etching property problem was encountered. In addition, the Cu concentration in sample No. 12 was below the lower limit (0.05%) of the present invention, and the sum of Mn and Cu also was lower than the lower limit (0.10%) of the present invention. As a result, the count for MnS

precipitates and Cu-S system ~~type~~ precipitates effective in improving etching properties decreased to less than 2,000 counts/mm^2 and resulted in a high etching defect generation frequency. Furthermore, in this sample, the sum of Ni and Co exceeded the upper limit (38.5%) for the present invention, and the coefficient of thermal expansion rose to a level higher than those of examples of the present invention.

Please replace the paragraph beginning at line 23 of page 15 with the amended paragraph below:

The sum of Mn and Cu in sample No. 13 was below the lower limit (0.10%) of the present invention. As a result, the count for MnS precipitates and Cu-S system ~~type~~ precipitates effective in improving etching properties decreased to less than 2,000 counts/mm^2 resulted in a high etching defect generation frequency. Furthermore, in this sample, the total amount of elements such as Nb exceeded the upper limit (1.0%) of the preferable embodiment of the present invention resulting in a higher 0.2% yield strength than those of examples of the present invention, and the press processing was difficult to perform.